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ABSTRACT

Practitioners at all levels of education have begun to recognize that addressing the complex social and environmental problems of the future will require individuals capable of reflective and critical thought. Critical thinking has been defined as utilizing a number of cognitive processes and attitudes that undergird intelligent action in diverse situations and fields. Critical thinkers are able to discern the thought patterns and beliefs in the works of others, and to reflect upon their own beliefs, decisions, and actions. Much of community college instruction is delivered through traditional lectures, which promote lower-order learning involving rote memorization. In order to facilitate critical thinking, instructors will need to change their means of presenting information, by emphasizing open-ended questions and other techniques that encourage analysis, problem-solving, conceptualization, self-reflection, and the application of knowledge to the real world. Some educators contend that writing is crucial to critical thinking, because the act of producing written work stimulates new thinking and new discoveries. Others suggest focusing on students' "why" questions, having students analyze the information presented in the textbook to identify the forms of inquiry used to generate it, examine critical analyses of texts, and develop their own criticisms drawing on personal experience. Many community colleges have begun to implement critical thinking programs of their own, most of which begin with seminars for the instructors, focusing on curriculum redesign, coaching, evaluation, and follow-up. Promoting critical thinking will require changes not only in teaching practices, but also in the curricula and mission of community colleges. (MAB)

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Critical Thinking in Community Colleges

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The issue of critical thinking is being addressed at all levels of education throughout the nation. "Deep-seated problems of environmental damage, human relations, overpopulation, rising expectations, diminishing resources, global competition, personal goals, and ideological conflict" will need to be addressed by individuals capable of reflective and critical thought (Paul, 1992, p. 4). Many of today's youth lack the basic skills to function effectively when they enter the workforce. A common complaint is that entry-level employees lack the reasoning and critical thinking abilities needed to process and refine information. With the modern work environment requiring more thinking and problem solving than the jobs of the past, community college teachers and administrators should emphasize critical thinking on their campuses, in their curricula, and in their teaching practices in order to prepare students to function effectively in today's workforce. This digest presents an overview of the concept of critical thinking, methods of teaching critical thinking, and examples of critical thinking programs in community colleges.

What Is Critical Thinking?

Cromwell (1992) notes that the definition of critical thinking has gone through a transformation from meaning the ability to distinguish the thought patterns in the work of others to a reflection on one's own beliefs, thoughts, and decisions. Nickerson, Perkins, and Smith (1985, p. 4-5) define it as figuring out what to believe, in a variety of contexts, "in a rational way that requires the ability to judge the plausibility of specific assertions, to weigh evidence, to assess the logical soundness of inferences, to construct counter arguments and alternative hypotheses." Paul (1992, p. 9-10) defines critical thinking as "disciplined, self-directed thinking that exemplifies the perfections of thinking appropriate to a particular mode or domain of thought." Glock (1987, p.9) offers the following broad definition: "Critical thinking skills are (a) those diverse cognitive processes and associated attitudes, (b) critical to intelligent action, (c) in diverse situations and fields, (d) that can be improved by instruction or conscious effort."

Teaching Critical Thinking

Much of community college instruction is delivered through lectures. The instructor stands in front of a classroom and recites facts and information, while students sit passively and soak up (or ignore) what the instructor is presenting. The goal of teaching, in this mode, is to facilitate students' rote memorization of facts from lectures and textbooks. According to Paul (1992, p.4), this type of lower-order learning, "undisciplined, associative, and inert" hinders rather than facilitates the educational process. Instead, students must be encouraged to go beyond the memorization of a fact, and adjust that fact to a particular domain of thought. For students to gain critical thinking skills, teachers will have to change the way they present materials and change who does the presenting in their classrooms. They must learn to ask more open-ended questions -- why, how, and what if -- and coach students through the process of learning how to answer them. Rather than having students absorb knowledge, teachers must encourage students to think problems through, analyze, conceptualize, ask questions, be questioned, and reflect on how their beliefs might affect and compare to others. In addition to memorizing facts and figures for a final examination, students must be challenged to apply what they have learned to the real world.

Glock (1986) suggests ways that teachers can reinforce verbal critical thinking skills by focusing greater attention on students' *why* questions than their *who*, *where* and *how* questions. Teachers should also pay attention to their own methods of asking questions, questioning answers, and questioning questions. She suggests the following:

- When a student asks a why question, have the rest of the class discuss the kinds of questions that are most powerful and the sources of their power. Explain the structure of analytical questions. Use such questions -- especially those generated by students -- in quizzes.
- Once students become accustomed to answering analytical questions using material presented in class, ask similar questions that must be answered through their own work experience or out-of-class inquiries.
- Have students analyze the information presented in the textbook to discern which forms of inquiry were used to generate it.
- Have students read critical analyses of their text, and encourage students to develop their own criticisms based on their personal experiences.
- Compare opposing positions on a topic, and help students identify the sources of the differences of opinion. Avoid emotion-laden topics until students begin to perceive the "universality of reinterpretation and redefinition."

In her second-year oral communications course, Tripp (1990) uses the problem-solving conference. Students (1) select, define, and establish the parameters of a school-related problem; (2) analyze the problem to identify underlying causes, its scope and seriousness, and potential impact; (3) conduct a brainstorming session to generate creative solutions;

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(4) assess the proposed solutions in terms of viability and potential effectiveness; (5) reach consensus on the solutions; and (6) implement the decision. This process is used in the development of students' group research projects, which result in a technical report based on primary research. Questionnaires and interviews are generally used to gather data on such problems as curriculum requirements, campus parking, or dress codes. All group members should be involved throughout the process -- "talking, listening, gathering data, writing, and editing" -- and decisions should be reached democratically.

Sheridan (1992) believes that writing facilitates critical thinking, arguing that "the act of generating written discourse is not merely a result of critical thinking but also a stimulus to new thinking and new discoveries." In his freshman composition course, Sheridan uses the Freewrite exercise to liberate students from their stultifying fear of grammar and spelling mistakes and open them to the risk taking required for innovative thought. Subsequent writing assignments are based on real life topics generated by the students themselves in a series of brainstorming sessions. With instructor guidance the students also generate other thinking-writing strategies to apply to their assignments, including techniques such as:

- Focused Freewrite
- Categorize Completely
- Prioritize Please
- Alternate Ways of Looking
- Advantages-Disadvantages
- Creative Alternative
- Compare-Contrast
- State Problem Specifically
- Mine for Metaphors
- Take the Next Step
- Essential to Consider Opposition
- Alternate Solution
- Consider Position
- Sequence Your Points
- Stand It on Its Head
- Write It in Pieces
- Close Strongly
- Disobey Directions Creatively

The students also generate the criteria to be used in evaluating their written work, in the belief that students will more readily internalize standards they themselves have suggested.

Critical Thinking Programs at Community Colleges

Some colleges have introduced campuswide programs to implement critical thinking across the curriculum. At Miami-Dade Community College, the Learning to Learn Subcommittee was formed to help create a course for faculty in teaching-learning theory, specify student behaviors and teaching methods to promote critical thinking skills, and develop ways to include the learning-to-learn concept across all disciplines (Miami-Dade Community College District, 1989). Similarly, Oakton Community College's (OCC) critical thinking program began with the faculty (Lee, Bers, and Storinger, 1992). One of the central components of the Critical Literacy Project is a year-long, faculty seminar designed and taught by OCC faculty, to teach volunteer participants ways of incorporating critical literacy skills into their courses. In addition to providing a theoretical context for course revisions, the seminar utilizes a workshop format during which participants rethink and revise at least one of their courses to incorporate critical literacy content and assignments. The Community College of Aurora, Colorado, involves faculty in a year-long Integrated Thinking Skills Project, in which interdisciplinary teams of faculty participate in critical thinking training, curriculum redesign, coaching, evaluation, and follow-up. Ten years ago, LaGuardia Community College began its critical thinking program with its Critical Thought Skills (CTS) course. Course objectives are: "Enhance and accelerate the development of students' reading, writing, and speaking skills; Develop and refine students' higher order thinking, reasoning, and problem-solving abilities; and Encourage students to explore their basic attitudes toward their lives and larger social concerns, fostering qualities such as maturity and responsibility" (Chaffee, 1992, p.27).

At other institutions, critical thinking is implemented through curriculum change. At Alverno College, eight abilities (i.e., communication, analysis, problem solving, valuing, social interaction, responsibility toward the global environment, effective citizenship, and aesthetic responsiveness) have been embodied in the curriculum to facilitate the intellectual development of students (Cromwell, 1992).

Conclusion

The ability to analyze problems and think critically will serve students well in today's complex world. Taking on the role of preparing and training students for this world will require many changes in teaching practices and learning styles, and in community college curricula and institutional mission.

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This digest was drawn in part from *Critical Thinking: Educational Imperative, New Directions for Community Colleges, Number 77*, edited by Cynthia A. Barnes. The cited articles are: "Critical Thinking: What, Why, and How," by Richard Paul; "Teaching Critical Thinking Across the Curriculum," by John Chaffee; "Assessing Critical Thinking," by Lucy S. Cromwell; "Skipping on the Brink of the Abyss: Teaching Thinking through Writing," by James J. Sheridan; and "The Critical Literacy Seminar: A Faculty Development and Rejuvenation Strategy," by Margaret B. Lee, Trudy H. Bers, and Richard Storinger.

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